

SMALL MOLECULE ANTAGONISTS OF BCL-2 FAMILY PROTEINS

ABSTRACT

The present invention relates to naturally occurring and chemically synthesized small molecule antagonists of Bcl-2 family proteins. In particular, the present invention provides gossypol compounds (e.g., isomers, enantiomers, racemic compounds, metabolites, derivatives, pharmaceutically acceptable salts, in combination with acids or bases, and the like) and methods of using these compounds as antagonists of the anti-apoptotic effects of Bcl-2 family member proteins (e.g., Bcl-2, Bcl-X_L, and the like). The present invention also provides compositions comprising gossypol compounds and optionally one or more additional therapeutic agents (e.g., anticancer/chemotherapeutic agents). The present invention also provides methods for treating diseases and pathologies (e.g., neoplastic diseases) comprising administering a composition comprising gossypol compounds and optionally one or more additional therapeutic agents (e.g., anticancer/chemotherapeutic agents) and/or techniques (e.g., radiation therapies, surgical interventions, and the like) to a subject or *in vitro* cells, tissues, and organs.